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## Search History

**DATE: Wednesday, September 25, 2002** Printable Copy Create Case

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| *DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ* | | | |
| L6 | l4 and L5 | 5 | L6 |
| L5 | alkylglycoside$1 or alkylglucoside$1 | 958 | L5 |
| L4 | (l1 and l2) not L3 | 329 | L4 |
| L3 | l1 same L2 | 1492 | L3 |
| L2 | diuron or linuron or sulfometuron or chlorsulfuron or metsulfuron or chlorimuron or atrazine or simazine | 4127 | L2 |
| L1 | glyphosate or fomesafen or glufosinate or paraquat or bentazon$1 | 5118 | L1 |

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☐ 1. Document ID: US 20020123430 A1

L6: Entry 1 of 5 File: PGPB Sep 5, 2002

PGPUB-DOCUMENT-NUMBER: 20020123430
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020123430 A1

TITLE: Pesticide compositions containing oxalic acid

PUBLICATION-DATE: September 5, 2002

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---|---|---|---|---|
| Xu, Xiaodong C. | Valley Park | MO | US | |
| Brinker, Ronald J. | Ellisville | MO | US | |
| Reynolds, Tracey L. | Ballwin | MO | US | |
| Abraham, William | Wildwood | MO | US | |
| Graham, Jeffrey A. | Wildwood | MO | US | |

US-CL-CURRENT: 504/206; 504/363

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | Claims | KWIC
Draw. Desc | Image

☐ 2. Document ID: US 20020098981 A1

L6: Entry 2 of 5 File: PGPB Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020098981
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020098981 A1

TITLE: Solid mixtures based on sulfonylureas and adjuvants

PUBLICATION-DATE: July 25, 2002

INVENTOR-INFORMATION:

| NAME | CITY | STATE | COUNTRY | RULE-47 |
|---|---|---|---|---|
| Bratz, Matthias | Limburgerhof | | DE | |
| Jager, Karl-Friedrich | Limburgerhof | | DE | |

US-CL-CURRENT: 504/211; 504/212, 504/358

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC
Draw. Desc | Image

☑ 3. Document ID: US 6180566 B1

L6: Entry 3 of 5 File: USPT Jan 30, 2001

US-PAT-NO: 6180566
DOCUMENT-IDENTIFIER: US 6180566 B1

TITLE: Herbicide preparation, a process for producing it and an activating additive for application therewith

DATE-ISSUED: January 30, 2001

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---|---|---|---|---|
| Nielsen; Erik | Greve | | | DK |
| Oxb.o slashed.l; Arne | R.o slashed.dovre | | | DK |

US-CL-CURRENT: 504/206; 504/363

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☑ 4. Document ID: US 6010979 A

L6: Entry 4 of 5 File: USPT Jan 4, 2000

US-PAT-NO: 6010979
DOCUMENT-IDENTIFIER: US 6010979 A

TITLE: Herbicidal composition

DATE-ISSUED: January 4, 2000

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---|---|---|---|---|
| Osborn; Martin Keith | Wokingham | | | GB |
| Bean; Michael John | Bracknell | | | GB |
| Wikeley; Philip Simon | Loughborough | | | GB |

US-CL-CURRENT: 504/206

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

☐ 5. Document ID: US 5795847 A

L6: Entry 5 of 5 File: USPT Aug 18, 1998

US-PAT-NO: 5795847
DOCUMENT-IDENTIFIER: US 5795847 A

TITLE: Herbicide preparation, a process for producing it and an activating additive

for application therewith

DATE-ISSUED: August 18, 1998

INVENTOR-INFORMATION:

| NAME | CITY | STATE | ZIP CODE | COUNTRY |
|---|---|---|---|---|
| Nielsen; Erik | Greve | | | DK |
| Oxb.o slashed.l; Arne | R.o slashed.dovre | | | DK |

US-CL-CURRENT: 504/206

Full | Title | Citation | Front | Review | Classification | Date | Reference | Sequences | Attachments | KWIC | Draw Desc | Image

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L6: Entry 4 of 5 File: USPT Jan 4, 2000

DOCUMENT-IDENTIFIER: US 6010979 A
TITLE: Herbicidal composition

Brief Summary Text (1):
This invention relates to a herbicidal composition and in particular to a glyphosate composition.

Brief Summary Text (2):
The term "glyphosate composition" is used herein to mean a herbicidal composition comprising an active ingredient N-phosphonomethylglycine or a herbicidally acceptable salt thereof.

Brief Summary Text (3):
Herbicidally active glyphosate compositions are well known and are commercially available in the form of the trimethylsulphonium, isopropylamine and other salts. Such compositions are generally applied to unwanted vegetation in the form of an aqueous formulation containing a variety of adjuvants including for example wetters or other surface-active agents, anti-freeze agents, dyes, dispersants, rheological agents, anti-foam agents and humectants. The activity of the glyphosate composition may be improved considerably by the careful choice of additives. The literature contains many hundreds of examples of different glyphosate formulations exhibiting a variety of properties and designed for a variety of purposes.

Brief Summary Text (4):
Glyphosate compositions are very effective in killing unwanted weeds to which they are applied. However the uptake of the glyphosate composition by the plant leaf surface is relatively slow. In consequence the composition may be washed off the leaf surface and the herbicidal effectiveness may be reduced or even lost if rain falls shortly after application of the composition (for example within 6 hours of application). This is a particular problem for example in tropical climates in which it is difficult to predict the occurrence of heavy rain showers. Glyphosate compositions have been produced which are claimed to give improved rainfastness, but the topic is poorly understood and the physical parameters involved are highly complex and may vary from species to species. It may for example be appropriate to provide a composition which generally improves rainfastness for most species but is relatively ineffective on particular individual species. One approach which has been studied is to seek to improve the rate of uptake of the glyphosate composition into the leaf surface with a view to minimising the susceptibility to rain. Such improved uptake is often only achieved however at the expense of localised tissue damage and reduced translocation. It is clearly important that improved rainfastness is not associated with a significant reduction in herbicidal activity in the absence of rain. It is therefore desired to provide a glyphosate composition combining good activity in the absence of rain with effective rainfastness.

Brief Summary Text (5):
The present invention seeks to provide herbicidally effective compositions having improved rainfastness, by which is meant that compositions of the present invention generally reduce the overall loss in herbicidal effectiveness resulting from a fall of rain within for example from 1 to 6 hours after application of the composition. Compositions of the present invention may also show enhanced activity as compared with known glyphosate compositions and advantage as compared with known compositions may be found in either one or in both of these effects.

Brief Summary Text (6):
According to the present invention there is provided a glyphosate composition comprising (i) N-phosphonomethylglycine or an agriculturally acceptable salt thereof, (ii) a alkylglycoside surfactant of formula (I): ##STR1## wherein R.sup.1 represents a C1 to C8 alkyl group, the sum of w+x+y+z is from 4 to 40 and R.sup.2 is hydrogen or a C1 to C6 alkyl group or a group of formula --R.sup.3 --N.sup.(+) R.sup.4 R.sup.5 R.sup.6 X.sup.- wherein R.sup.3 is a C1 to C6 alkylene group optionally substituted with hydroxy, R.sup.4, R.sup.5 and R.sup.6 are each alkyl groups wherein the total number of carbon atoms in R.sup.4, R.sup.5 and R.sup.6 is from 6 to 25 and X.sup.- is an agrochemically acceptable anion and (iii) an ethoxylated alcohol.

Brief Summary Text (11):
As examples of suitable ethoxylated alkylglucosides which may be used in the present invention may be mentioned the compound available under the trade name GLUCAM E-10 and E-20 of structure (II) wherein w+x+y+z represents 10 for GLUCAM E-10 AND 20 FOR GLUCAM E-20, and the compound available under the trade name GLUCQUAT 125 having the structure (III) wherein w+x+y+z represents 10. The product GLUCQUAT 125 is a 25% by weight solution of the above compound in water. ##STR2##

Brief Summary Text (17):
Thus in one embodiment of the present invention there is provided an aqueous herbicidal concentrate which is sufficiently storage-stable for commercial use and which is diluted before use, usually with water. The term "herbicidal concentrate" covers a range of compositions from the relatively dilute which requires the addition of relatively little water to a more concentrated composition which has a high content of glyphosate and thus has advantages for handling and transportation. The preference for a concentrated glyphosate rainfast composition poses an additional problem which must be solved, since many adjuvants are incompatible with each other or with the active ingredient in concentrated compositions. By the term "concentrated" glyphosate composition is meant a composition having a concentration greater than 210 g/l for example greater than 220 g/l based on glyphosate acid. In the case of the trimethylsulphonium salt of glyphosate for example, this equates to a concentration of greater than 304 g/l and more particularly greater than about 319 g/l based on the salt.

Brief Summary Text (18):
In an alternative embodiment of the present invention the alkyl glucoside and the ethoxylated alcohol may be formulated together, optionally with other adjuvants such as an inorganic salt or one or more additional surfactants as described below, to form an adjuvant composition suitable for tank mixing with a glyphosate composition. The adjuvant composition is tank mixed prior to use, for example with a commercially available glyphosate composition. The glyphosate composition could be an aqueous formulation containing essentially only glyphosate or could itself contain suitable adjuvants.

Brief Summary Text (19):
Thus according to a further aspect of the present invention there is provided an adjuvant composition suitable for admixture with N-phosphonomethylglycine or an agriculturally acceptable salt thereof to form a composition according to the present invention which adjuvant composition comprises (i) an ethoxylated alkylglucoside surfactant and (ii) an ethoxylated alcohol and optionally (iii) an additional surfactant.

Brief Summary Text (20):
The proportion of ethoxylated alkylglucoside present in the herbicidal composition or in the adjuvant composition is preferably from 1 part by weight of ethoxylated alkylglucoside per 5 parts ethoxylated alcohol to 8 parts by weight of ethoxylated alkylglucoside per 1 part ethoxylated alcohol and most preferably from 0.5 parts by weight of ethoxylated alkylglucoside per 1 part ethoxylated alcohol to 8 parts by weight ethoxylated alkylglucoside per 1 part ethoxylated alcohol for example from 1 part by weight ethoxylated alkylglucoside per 1 part by weight ethoxylated alcohol to 8 parts by weight ethoxylated alkylglucoside per 1 by weight part ethoxylated alcohol. An especially preferred composition contains about equal proportions by

weight of ethoxylated alkylglucoside and ethoxylated alcohol.

Brief Summary Text (22):
The proportion of additional surfactant is preferably from 0 to 2 parts by weight per 1 part by weight of ethoxylated alcohol and more preferably about 1 part by weight per 1 part by weight of ethoxylated alcohol. Thus an especially preferred composition comprises a total adjuvant system comprising substantially equal proportions by weight of ethoxylated alkylglucoside, ethoxylated alcohol and additional surfactant.

Brief Summary Text (23):
The proportion by weight of the total adjuvant system (ethoxylated alkylglucoside, ethoxylated alcohol and any additional surfactant used) to the glyphosate salt in a concentrate composition is preferably from 3:1 to 1:3 and especially from 1:1 to 1:3. A ratio of about 1:2 is especially preferred. Higher proportions of adjuvant system may be used if desired in a tank mix or ready to use composition.

Brief Summary Text (25):
Thus according to a further aspect of the present invention there is provided a glyphosate composition comprising (i) N-phosphonomethylglycine or an agriculturally acceptable salt thereof, (ii) an ethoxylated alkylglucoside surfactant, (iii) an ethoxylated linear or branched chain alcohol and (iv) a humectant.

Brief Summary Text (27):
The humectant is most conveniently used in a tank mix composition or in a ready to use composition. The proportion is preferably from 1 part of glyphosate salt per 1 part humectant to 1 part glyphosate salt per 20 parts humectant.

Brief Summary Text (28):
The composition of the present invention may additionally include an inorganic ammonium salt such as ammonium sulphate as an activity-enhancing adjuvant. The proportion of ammonium sulphate (if used) is preferably from 1 part inorganic ammonium salt per 1 part glyphosate salt to 10 parts ammonium salt per 1 part glyphosate salt. The ammonium salt is most conveniently used in a tank mix composition or in a ready to use composition.

Brief Summary Text (33):
Liquid compositions may comprise a solution, suspension or dispersion of the active ingredients in water optionally containing a surface-active agent, or may comprise a solution or dispersion of the active ingredient in a water-immiscible organic solvent which is dispersed as droplets in water. Preferred active ingredients of the composition of the present invention are water-soluble herbicides or are readily suspended in water and it is preferred to use aqueous compositions and concentrates. In particular, the trimethylsulphonium, isopropylamine, sodium and ammonium salts of glyphosate are all readily soluble in water.

Brief Summary Text (40):
The other herbicide may be any herbicide other than a glyphosate salt. It will generally be a herbicide having a complementary action in the particular application.

Brief Summary Text (42):
A. benzo-2,1,3-thiadiazin-4-one-2,2-dioxides such as bentazone;

Brief Summary Text (47):
F. arylurea herbicides such as diuron, flumeturon, metoxuron, neburon, isoproturon, chlorotoluron, chloroxuron, linuron, monolinuron, chlorobromuron, daimuron, methabenzthiazuron;

Brief Summary Text (51):
J. triazine herbicides such as atrazine, simazine, aziprotryne, cyanazine, prometryn, dimethametryn, simetryne, and terbutryn;

Brief Summary Text (59):
R. diphenylether herbicides such as lactofen, fluroglycofen or salts or ester

thereof, nitrofen, bifenox, aciflurofen and salts and esters thereof, oxyfluorfen, fomesafen, chlornitrofen and chlomethoxyfen;

Brief Summary Text (62):
U. sulfonyl urea herbicides such as chlorosulfuron, sulfometuron, metsulfuron and esters thereof; benzsulfuron and esters thereof such as DPX-M6313, chlorimuron and esters such as the ethyl ester thereof pirimisulfuron and esters such as the methyl ester thereof, 2-[3-(4-methoxy-6-methyl-1,3,5-triazin-zyl)-3-methylureidosulphonyl) benzoic acid esters such as the methyl ester thereof (DPX-LS300) and pyrazosulfuron;

Brief Summary Text (65):
X. amino acid herbicides such as glufosinate and its esters.

Brief Summary Text (70):
bipyridylium herbicides such as those in which the active entity is paraquat and those in which the active entity is diquat;

Detailed Description Text (4):
The adjuvant system contained equal parts by weight of an ethoxylated alkylglucoside of formula (III) above (commercially available as a 25% solution under the trademark GLUCQUAT 125) and a mixture of ethoxylated branched linear C.sub.13 -C.sub.15 alcohols having ethylene oxide contents of 11 and 20 respectively (SYNPERONIC A11 and SYNPERONIC A20 in the ratio of 60 to 40) giving an overall mean ethylene oxide content of about 15. The ED 90 Data is given in Table 2 below.

Detailed Description Text (8):
The procedure of Example 1 was repeated using 0.25% w/v tank-mixed adjuvant system containing equal weights of SYNPERONIC A16 and the ethoxylated alkylglucoside of formula (ii) commercially available as GLUCAN E-20 at a strength of 10% w/w. The ED 90 values are presented in Table 2.

CLAIMS:

1. A glyphosate composition comprising (i) N-phosphonomethylglycine or an agriculturally acceptable salt thereof, (ii) a alkylglycoside surfactant of formula (I) ##STR3## wherein R.sup.1 represents a C1 to C8 alkyl group, the sum of w+x+y+z is from 4 to 40 and R.sup.2 is hydrogen or a C1 to C6 alkyl group or a group of formula --R.sup.3 --N.sup.(+) R.sup.4 R.sup.5 R.sup.6 X.sup.- wherein R.sup.3 is a C1 to C6 alkylene group optionally substituted with hydroxy, R.sup.4, R.sup.5 and R.sup.6 are each alkyl groups wherein the total number of carbon atoms in R.sup.4, R.sup.5 and R.sup.6 is from 6 to 25 and X.sup.- is an agrochemically acceptable anion and (iii) an ethoxylated alcohol.

7. A composition according to claim 1 wherein the proportion of alkylglycoside is from 1 part by weight of alkylglycoside per 5 parts by weight of ethoxylated alcohol to 8 parts by weight of alkylglycoside per 1 part by weight of ethoxylated alcohol.

8. A composition according to claim 7 wherein the proportion of alkylglycoside is from 0.5 parts by weight of alkylglycoside per 1 part by weight of ethoxylated alcohol to 8 parts by weight of alkylglycoside per 1 part by weight of ethoxylated alcohol.

9. A composition according to claim 1 which is a herbicidal concentrate wherein there is used a water-soluble salt of N-phosphonomethylglycine and the concentration of the N-phosphonomethylglycine salt is greater than 210 g/l based on glyphosate acid.

10. A composition according to claim 1 wherein the proportion by weight of the total adjuvant system, being the alkylglycoside, ethoxylated alcohol and additional surfactant, if used, to the N-phosphonomethylglycine or the agriculturally acceptable salt thereof is from 3:1 to 1:3.

L6: Entry 3 of 5 File: USPT Jan 30, 2001

DOCUMENT-IDENTIFIER: US 6180566 B1
TITLE: Herbicide preparation, a process for producing it and an activating additive for application therewith

Abstract Text (1):
Stable, concentrated herbicide preparation comprising at least one herbicide with at least one amino group, at least one carboxylic acid group and at least one phosphor containing acid group suspended in finegrained form in a liquid phase, and at least 5% a by weight of a dissolved electrolyte; a process for producing said herbicide preparation and an activating additive (adjuvant) for combination with said herbicide preparation. Preferred suspensions comprise the herbicides glyphosate and glufosinate and the electrolyte ammonium sulphate, acting synergistically. It has not hitherto been possible to incorporate high concentrations of synergistic electrolytes in liquid concentrates of said herbicides.

Brief Summary Text (5):
The adjustment of the viscosity of a suspension by changing an eventual content of electrolyte, surfactant and glycol being well-known, this technic, however, is almost never practiced at the final adjustment of viscosity, because the effect is very dependent of temperature and difficult to reproduce. Centrifugal tests are notoriously of no relevance for the long term stability of suspensions. HU 200076 does not disclose that the amount of emulsifier necessary for sufficient wetting of the suspended pesticide may be reduced when an electrolyte is added. Similarly it is not disclosed in HU 200076, that the surfactant or the viscosity regulating polysaccharide may be omitted following the addition of an electrolyte. There is a certain overlap between the intervals of added electrolyte in HU 200076 and in the present invention, but the optimal amount of electrolyte in the present invention is above the most effective in HU 200076. The described pesticides are atrazine, isoproturon, bensultap, fluomethuron, lindane, thiophanat-methyl and elementary sulfur. None of these pesticides comprises a carboxylic acid group or a phosphor containing acid group.

Brief Summary Text (6):
It is well known that ammonium sulphate acts synergistically on the biological effect of glyphosate and glufosinate. For instance the patent literature contains many examples of combinations of glyphosate and ammonium sulphate, and in practice the farmer usually adds supplementary ammonium sulphate when diluting the glyphosate for use.

Brief Summary Text (7):
Danish patent application no. 2348/88 describe liquid, aqueous solutions of glyphosate with ethoxylated monoamines as surfactants. The possibility of dissolving additional ammonium sulphate exists, but this will lead to a lowering of the dissolvable quantity of glyphosate. Therefore, the maximum amount of glyphosate in a solution containing 280 g/l ammonium sulphate is approximately 120 g/l.

Brief Summary Text (8):
UK patent application GB 2.233.229 A describes a similar system, the ethoxylated monoamines being replaced by ethoxylated diamines. The typical, aqueous solutions contain 200 g/l ammonium sulphate and 75 g/l of glyphosate as its isopropylammonium salt.

Brief Summary Text (9):
UK patent application GB 2.245.170 A claims solutions of glyphosate containing ethoxylated phosphate esters as surfactants. In the examples, where ammonium sulphate has been added supplementary to the formulation in amounts of 200-300 g/l, the glyphosate constitutes 75 g/l corresponding to 100 g/l of the isopropylammonium salt.

Brief Summary Text (10):
In European patent application EP 441.764 A1 is mentioned, that alkoxylated, quaternary ammonium compounds especially coethoxylated-propoxylated quaternary ammonium compounds, is environmentally more acceptable and less skin and eye irritating than ethoxylated fatty amines. It is stated, that aqueous solutions of glyphosate in combinations with said surfactants also can contain ammonium sulphate, but no examples with such formulations are given. On the other hand two solid compositions containing ammonium sulphate are described.

Brief Summary Text (11):
In European patent application EP 498.785 A1 glyphosate formulations are mentioned, which contain esters of sorbitol and fatty acids as surfactants in combination with another surfactant. It is mentioned, that these formulations whether aqueous solutions or solid, finely distributed formulations may also contain ammonium sulphate or other inorganic ammonium salts. The system, however, seems to be best suited for solid formulations.

Brief Summary Text (12):
European patent application EP 498.145 A1 describes solid compositions containing glyphosate as free acid or salt, an inorganic ammonium salt (preferably ammonium sulphate) and alkyl-glycoside or alkylpolyglycoside as surfactant.

Brief Summary Text (13):
European patent application EP 448.538 A1 describes combinations of glyphosate and oxyfluorfen in solid formulations, additionally containing ammonium sulphate and other inorganic compounds.

Brief Summary Text (14):
International patent application WO 92/12637 deals with solid, preferably extruded or granulated formulations containing glyphosate in combination with alkaline compounds. A reaction takes place between the glyphosate and the alkaline compound either during the production process or during the subsequent mixing with the diluent water to totally or partly neutralize the glyphosate as salt whereby it dissolves easier and more quickly. The formulations shown besides comprise surfactants and frequently ammonium sulphate.

Brief Summary Text (15):
In danish patent application no. 6490/89 solid formulations of glyphosate in acid form containing a saturated C.sub.16-18 -fatty alcohol, being ethoxylated with approximately 25 moles ethyleneoxide are described. The formulations may additionally contain supplementary ammonium sulphate.

Brief Summary Text (16):
In german Offenlegungsschrift DE 3.926.800 A1 waterdispersable granulates are mentioned, containing a herbicide (anyhow preferably glufosinate) and 10-90% by weight of various anionic wetting agents. Examples of formulations with various amounts of ammonium sulphate are shown.

Brief Summary Text (17):
European patent application 243.872 A1 discloses pesticide preparations, comprising inter alia glyphosate dispersed in an oil containing, liquid phase. The addition to the formulations of ammonium sulphate is not mentioned.

Brief Summary Text (18):
French patent application 2.661.315 discloses the suspension of glyphosate and derivatives thereof in an organic solvent. The organic solvent might be water miscible, and it is mentioned that up to 50% of the solvent may be replaced by water. Furthermore the composition may comprise ammonium sulphate, which is

characterized as an adjuvant. The form of the ammonium sulphate of the composition is not apparent from the description, but in the 5 examples of the application, the ammonium sulphate together with the glyphosate compound seems to be totally suspended or dissolved only to a limited extent in the liquid phase.

Brief Summary Text (19):
International patent application WO 92/21686 describes the production of trimethylsulfonium salt of glyphosate for instance by the reaction of glyphosate trimethylsulfonium hydrogen sulphate with an alkaline compound like ammonia. The application does not mention herbicidal suspensions in relation to the present invention. No description is found, neither in the patent description nor in the examples, of significant amounts of glyphosate being at any time suspended in an electrolyte solution and certainly not in a stable form. The principles of the present invention for formulating glyphosate, seem never to have been considered.

Brief Summary Text (20):
Many of the examples shown demonstrate the desirability of combining the herbicides glyphosate or glufosinate with ammonium sulphate and selected surfactants in one and the same formulation. Advantageously the formulation is as concentrated as possible.

Brief Summary Text (21):
As far as liquid, dissolved formulations are concerned, the ammonium sulphate has a salting-out effect on the dissolved salts of glyphosate and glufosinate, as well as on the dissolved surfactants, and an upper limit exists of the concentration of the solution dependent on the actual surfactant. Environmental requirements on the detergents, for instance as to biodegradability, poor toxicity towards fishes and low skin and eye irritation may reduce still further the number of relevant wetting agents. Besides, the various surfactants differ significantly in their promotion of the biological effect of glyphosate and glufosinate.

Brief Summary Text (22):
Therefore, the trend in recent developments is towards solid, finely dispersed and non-dusty formulations. Although the solubility of ammonium sulphate in water is big, the speed of dissolution of ordinary, commercial, crystalline ammonium sulphate in water in practice is hardly acceptable. Consequently, the crystalline ammonium sulphate frequently needs to be grinded before being mixed with glyphosate or glufosinate or preferably a salt thereof, the selected surfactant(s) and additive(s) being subsequently added. Amongst the additives adhesives, absorbing fillers or anticaking agents should be mentioned, which are necessary to obtain a finely dispersed, non-caking and easily flowing, solid formulation of adequate storage stability. For these processes an expensive formulation equipment is necessary.

Brief Summary Text (33):
Herbicides with at least one primary, secondary and/or tertiary amino group, at least one carboxylic acid group and at least one phosphor containing acid group normally have a relatively high solubility in water: about 0.1 corresponding to 1000 ppm or more, preferably at least 0.4% corresponding to 4000 ppm; by way of example the solubility of glyphosate is approximately 1% by weight in pure water at 20.degree. C.

Brief Summary Text (36):
The fact, that the grinding can take place without viscosity problems, even when no surfactant is added, is probably an essential condition for realising the invention. Even if a surfactant were added, the salting out from the electrolyte of the compound would generally be so extensive, that the wetting effect of the insignificant amount still dissolved in the water phase would be too small to influence significantly on the grinding. The surfactant, however, is still desirable. As mentioned above said surfactant is necessary to ensure the optimum, biological effect of the formulation, and it might contribute to the stabilization of the final formulation, i.e. ensure that the formulation remains homogenous and does not separate. Apparently the finely grinded suspended herbicide and the added, finely distributed surfactant mutually interact to produce a mixture of an advantageous pseudoplastic or thixotropic character. Accordingly, it is possible to produce stable formulations comprising as the sole components water with dissolved

electrolyte, suspended glyphosate and surfactant. It is even possible to produce stable suspensions using no surfactants at all.

Brief Summary Text (43):
d) In suspension preparations the amount of suspended solid material in a liquid phase must be below a certain upper limit. Normally the practical limit is about 500 g/l suspension. In glyphosate preparations containing ammonium sulphate the desired content of ammonium sulphate as well as that of glyphosate is high, and this is not possible to obtain if both compounds are to be suspended. When the ammonium sulphate is dissolved in the water phase and the glyphosate only is dispersed herein, it is possible to increase the amounts of ammonium sulphate as well as glyphosate.

Brief Summary Text (51):
Specially preferred herbicides are glyphosate (N-(phosphonomethyl)-glycine), glufosinate (4-(hydroxy(methyl)phosphinoyl)-DL-homoalanine), bilanafos (4-hydroxy(methyl)phosphinoyl)-L-homoalanyl-L-alanyl-L-alanin) and/or glyphosine (N,N-bis(p-hosphionomethyl)glycine), compare claim 4.

Brief Summary Text (58):
The invention also relates to stable, activating additives (adjuvants) on concentrated form, said adjuvants being active when admixed with glyphosate- and/or glufosinate preparations for combatting weeds, and said additives comprising at least one surfactant in an amount of 4-58% by weight, said surfactant being emulsified, suspended and/or dissolved in a liquid, aqueous phase; the composition of the adjuvant being further characterized by comprising at least one undissolved, fine-grained, not biologically active viscosity regulating filler acting to prevent separation of the surfactant, said viscosity regulating filler comprised in an amount of min. 0.3% by weight, and said liquid, aqueous phase being characterized by comprising an electrolyte, which is dissolved in the liquid, aqueous phase and, which is not a surfactant, in an amount of min. 5%, compare claim 19.

Brief Summary Text (59):
Such a stable, activating additive is in a way an intermediate Lor the production of a concentrated suspension of glyphosate and/or glufosinate according to the invention, since the herbicide suspension can be produced from the additive simply by admixing finely grinded herbicide.

Brief Summary Text (60):
To produce the herbicidal solution/suspension for use, the farmer may make use of the additive, too. He just has to mix it with a glyphosate- or a glufosinate preparation. The form of the herbicide is of minor importance in this connection, for instance a finely grinded powder, a solid granulate, a solution in an appropriate solvent or even a suspension may be used.

Brief Summary Text (72):
Preferred herbicidal compositions are such, in which the selected herbicide is glyphosate or glufosinate, and the selected electrolyte is ammonium sulphate.

Brief Summary Text (82):
Specially preferred non-ionic surfactants are alkylglycosides, alkylpolyglycosides, alkoxylated alkylglycosides, alkoxylated alkylpolyglycosides, alkoxylated saccharides, alkoxylated polysaccharides, alkoxylated acetylene diols containing a symmetrically substituted triple bond and ethoxylated polymethylsiloxanes, compare claim 13.

Brief Summary Text (90):
The present invention does not relate to the final dilutions made at the user level. The invention relates to concentrates only, being herbicide preparations or activating additives, which according to the invention are formulated in a new and more advantageous way. Since dilutions of use, made from the concentrates to a certain extent are well known, because they can be obtained by separate addition of ammonium sulphate to known products, and they are known to posses a particularly satisfying biological effect, it seems redundant to proove the effect of the described compositions. There might be differences in the pH-values of the dilutions. For instance the pH-value of the herbicide preparations according to the

invention is frequently low, because the glyphosate is preferably used in its non-neutralized form, but this fact is known to be of no biological importance. Reference is made in this connection to Danish patent application 6490/89, specially dealing with glyphosate on non-neutralized form.

Brief Summary Text (107):
Specially preferred herbicide suspensions comprise glyphosate suspended in ammonium sulphate, said suspensions being produced by adding sulfuric acid to solutions of the ammonium salt of glyphosate or adding ammonia to a solution of the sulfuric acid salt of glyphosate, preferably while cooling and continuously stirring.

Brief Summary Text (112):
The amount of the herbicide, for instance glyphosate or glufosinate, constitutes 0.2-4 kg/ha, preferably 0.3-3 kg/ha, especially 0.5-2.2 kg/ha and specially 0.8-1.5 kg/ha, calculated on an active ingredient basis.

Detailed Description Text (2):
Experiments 1-5 (see table A) demonstrates the suspension of glyphosate in free, non-neutralized form in an aqueous solution of ammonium sulphate. Calculated on the aqueous solution the amount of ammonium sulphate is 40% in all 5 experiments corresponding to a saturation in water at approximately 0.degree. C. In all of the examples, ethoxylated fatty amines are used as surfactants.

Detailed Description Text (3):
For the manufacture of the compositions 1 and 2 the Genamine (the ethoxylated fatty amine) was initially dissolved in a part of the water, following which the pH was adjusted with concentrated sulfuric acid to pH=3.5. The rest of the water was then added and subsequently the ammonium sulphate was stirred in, leading to the precipitation of the chief of the Genamine. The mixture was transferred as quantitatively as possible to a mini-mill with a volume of maximally 50 ml from the company Eiger Engineering Ltd., Warrington, Cheshire, England, being filled with 1-2 mm zirkonium oxide pearls. The mill was started immediately at its highest speed, and the addition of glyphosate was started. After 5 minuttes all glyphosate was added. The grinding was continued for further approximately 10 minuttes. Attagel was added, and the grinding was continued for maximally 5 minuttes.

Detailed Description Text (4):
For the manufacture of the compositions 3, 4 and 5, the ammonium sulphate was initially dissolved in the total amount of water, following which the concentrated sulfuric acid was added, and the solution was transferred to the mini-mill. The mill was started at its highest speed, following which the addition of glyphosate was started. After 5 minuttes all glyphosate was added. The grinding was continued for further approximately 10 minuttes. Genamin was added immediately followed by Attagel, and the grinding was continued for approximately 5 minutes.

Detailed Description Text (6):
Samples of the above compositions were stored in 100 ml glass bottles with screw caps for 1 to approximately 4 weeks before the beginning of the accelerated testing. It was initially evaluated, whether the sample had separated a clear aqueous phase, and whether the surfactant had separated out on its own. The results of all evaluations are listed in table A. Subsequently the sample was shaken. The viscosity was visually evaluated, and the average particle size of the grinded glyphosate particles was estimated microscopically at 256.times.. (It is very difficult to use a particle sizer for so many samples, because the samples must be measured in concentrated salt solutions possibly further saturated with glyphosate, in order to ensure, that the samples are not dissolved in the water. It is also important that the concentrated salt solution does not contain undissolved impurities, which might disturb the measurements). It was also estimated, whether the added surfactants had separated out as oily drops If so, the estimated size of the drops was noted. If no oily drops could be observed, a "n.d." (not detected) is stated in the table. It should be noted, that any microscopic airbubbles present may give rise to a false positive result.

Detailed Description Text (18):
After this testing period both groups of samples were cooled to ambient temperature

and evaluated as mentioned above. Supplementary the speed of dissolution was determined as follows: 1 ml suspension was pipetted off and placed in a 150 ml beaker containing 100 ml deionized water. The mixture was stirred on a magnetic stirrer of moderate speed using a 4 cm magnet so as to produce an approximately 1 cm deep vortex in the diluent water, and the period of time until no more undissolved glyphosate could be observed was measured in seconds. All observations are listed in table A.

Detailed Description Text (24):
Experiments 6-10, 11-15, 16-20, 21-25 and 26-29 in the tables B, C, D, E, and F describe glyphosate compositions comprising various surfactants in varying amounts. The ratio glyphosate/surfactant is about 2/1 corresponding to the usual ratio in most commercial products. The amount of finely distributed fillers varies from 0 to 2% by weight. In all of the experiments the amount of the electrolyte ammonium sulphate is varying from app. 20 to 27% by weight. The grinding is performed in a mini-mill as described for the samples 3-5 in table A, the sulfuric acid addition, however, being omitted.

Detailed Description Text (30):
Experiments 31-35, 36-40, 41-45 and 46-49 in the tables G, H, I and J relate to various glyphosate compositions. Experiments 31-33 (table G) relate to compositions with ammonium salts different from ammonium sulphate. Experiments 34 and 35 (table G) relates to compositions comprising herbicide only suspended in an electrolyte solution. Experiments 36-40 (table H) show the use of potassium thiocyanate, sodium bromide and ammonium acetate as electrolyte. In the experiments 36 and 37, one of the acid groups in glyphosate is transformed into the sodium salt. In experiment 38, a little amount only of glyphosate is transformed into the sodium salt. In experiments 39 and 40, one of the acid groups in glyphosate is transformed into its ammonium salt. The experiments 41-45 (table I) relate to compositions comprising viscosity regulating, hygroscopic compounds. These are glycerine, propylene glycol, polyethylene glycol and lactic acid. Obviously the addition of these to the aqueous phase caused no tendency to separation of undissolved electrolyte. Experiments 46 and 47 relate to compositions further comprising oil. Experiment 48 and 49 relate to compositions comprising herbicide suspended in an electrolyte solution and small amounts of a viscosity regulating filler, but no surfactant.

Detailed Description Text (35):
In the experiments 46 and 47, the oils apparently do not disperse onto the grinded glyphosate, unlike the surfactants. This conclusion is based partly on the microscopy and partly on the experiment 46, in which the sample, which had been stored at varying temperatures, at the end of the experiment had separated two upper, clear phases. This was not observed in experiment 47. In both samples, the oil was uniformly re-distributed in the compositions after shaking.

Detailed Description Text (39):
Experiments 52-55 in table L relate to glufosinate suspended in an aqueous electrolyte solution. The electrolyte is either ammonium sulphate or ammonium sulfamate. The samples of experiments 52-54 further comprise a surfactant. The sample of experiment 55, on the other hand, comprises only water, ammonium sulphate and glufosinate.

Detailed Description Text (42):
Apparently, the glufosinate compositions are generally a little thin and therefore has a tendency to separate a clear liquid. This might be compensated for by changing the ratio between suspended solids and liquid electrolyte solution.

Detailed Description Text (52):
The product of example 60 has been produced by initially dissolving the ammonium sulphate in water (40% ammonium sulphate solution) followed by admixture of propylene glycol, leading to a precipitation of ammonium sulphate. The stirring on the mini-mill was started, and the glyphosate was added in the usual way followed by admixture of Genapol OX-130.

Detailed Description Text (54):
At normal temperatures an ammonium sulphate solution comprises approximately 40%

ammonium sulphate. In experiment 61 20 g ammonium sulphate was dissolved in the water phase followed by addition of propylene glycol, causing a precipitation of ammonium sulphate. Another 20 g ammonium sulphate was finely grinded in a blender with a view to adding it slowly during grinding before the addition of glyphosate, before the addition of Genapol and after the addition of Genapol, respectively.

Detailed Description Text (58):
A preferred composition of glyphosate in electrolyte solution comprises the following:

Detailed Description Text (59):
169.1 g glyphosate

Detailed Description Text (64):
169.1 g glyphosate is dissolved in 266 g water and 80 g aqueous 25% w/w ammonia solution together with 159,4 g ammonium sulphate in a beaker and is transferred to another container under vigorous stirring.

Detailed Description Paragraph Table (2):
TABLE A Experiment no. 1 2 3 4 5 Compo- nents Composition in % Deionized 41.6 41.1 41.0 41.0 40.8 water Ammonium 27.8 27.4 27.4 27.4 27.2 sulphate Glyphosate, 20.8 20.6 20.6 20.6 20.4 98% Genamin T 6.9 6.8 150 (1) Genamin O 6.8 80 (2) Genamin C 6.8 100 (3) Genamin C 6.8 020 (4) Sulfuric app. 1.5 app. 1.4 2.1 2.1 2.7 acid, 98% Attagel (5) 1.4 2.7 2.1 2.1 2.1 Total weight 144 146 146 146 147 (g) Density 1.30 1.29 1.28 1.28 1.25 (g/ml) Glyphosate 270 266 264 264 255 (g/l) Ammonium 361 353 351 351 340 sulphate (g/l) Evaluation before storage Appearance 15% upp. 10% upp. 10% upp. 10% upp. 10% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity pseudo- slightly slightly pseudo- pseudo- plastic viscous viscous plastic plastic Particle app. 10 app. 10 5-10 app. 10 5-10 size (.mu.m) Oil drops n.d. n.d. n.d. n.d. n.d. (.mu.m) Evaluation after storage at various temperatures Appearance 30% upp. 20% upp. 15% upp. 25% upp. 25% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity easily suffici- suffici- easily easily ently ently Particle app. 10 10-15 app. 10 10-15 5-10 size (.mu.m) Oil drops n.d n.d. n.d. n.d. n.d. (.mu.m) Speed of 4 6 3 3 2 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance 15% upp. 5% upp. 10% upp. 10% inner 15% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity pseudo- slightly pseudo- pseudo- pseudo- plastic viscous plastic plastic plastic Particle app. 10 10-15 app. 10 10-15 app. 10 size (.mu.m) Oil drops n.d. n.d. n.d. n.d. n.d. (.mu.m) Speed of 3 4 4 2 7 dissol. (s)

Detailed Description Paragraph Table (3):
TABLE B Experiment no. 6 7 8 9 10 Component Composition in % Deionized 40.5 40.5 40.5 40.5 40.5 water Ammonium 27.0 27.0 27.0 27.0 27.0 sulphate Glyphosate, 20.3 20.3 20.3 20.3 20.3 98% Ethoquad 10.2 C/25 (6) Emcol CC 10.2 55 (7) Ampholyt 10.2 SKKP-70 (8) Synperonic 10.2 NP-10 (9) Tween 20 10.2 (10) Attagel (5) 2.0 2.0 2.0 2.0 2.0 Total weight 148 148 148 148 148 (g) Density 1.28 1.27 1.27 1.27 1.27 (g/ml) Glyphosate 260 258 258 258 258 (g/l) Ammonium 346 343 343 343 343 sulphate (g/l) Evaluation before storage Appearance no se- no se- 15% lower 15% lower 10% lower paration paration cl. phase cl. phase cl. phase Viscosity slightly easily slightly slightly slightly viscous viscous viscous viscous Particle app. 10 app. 10 10-15 10-15 10 size (.mu.m) Oil drops n.d. n.d. n.d. n.d. 25-100 (.mu.m) Evaluation after storage at various temperatures Appearance 20% upp. 30% upp. no se- 20% upp. 15% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity easily easily passende passende passende viscous viscous viscous Particle app. 5 app. 10 app. 10 app. 10 10-15 size (.mu.m) Oil drops n.d n.d. n.d. n.d. n.d. (.mu.m) Speed of 2 2 3 3 2 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance 10% upp. 25% upp. no se- no se- 10% upp. cl. phase cl. phase paration paration cl. phase Viscosity pseudo- easily pseudo- slightly pseudo- plastic plastic viscous plastic Particle 5-10 5-10 ap. 10 10-15 10-15 size (.mu.m) Oil drops n.d. n.d. n.d. n.d. n.d. (.mu.m) Speed of 4 1 3 7 2 dissol. (s)

Detailed Description Paragraph Table (4):
TABLE C Experiment no. 11 12 13 14 15 Component Composition in % Deionized 40.5 40.5 40.5 40.5 40.5 water Ammonium 27.0 27.0 27.0 27.0 27.0 sulphate Glyphosate, 20.3 20.3 20.3 20.3 20.3 98% Plantaren 10.2 225 (11) Plantaren 10.2 600 CS (12) Berol 02 10.2 (13) Berol 922 10.2 (14) Pleuriol 10.2 PE6400 (15) Attagel (5) 2.0 2.0 2.0 2.0

2.0 Total weight 148 148 148 148 148 (g) Density 1.28 1.28 1.28 1.27 1.28 (g/ml) Glyphosate 260 260 260 258 260 (g/l) Amm. 346 346 346 343 346 sulphate (g/l) Evaluation before storage Appearance foaming 15% lower no se- no se- 15% upp. 10% lower cl. phase paration paration cl. phase cl. phase Viscosity pseudo- suffici- clearly pseudo- pseudo- plastic ently pseudo- plastic plastic plastic Particle 10-15 app. 10 app. 10 app. 15 app. 15 size (.mu.m) Oil drops n.d. n.d. <25 25-100 >100 (.mu.m) Evaluation after storage at various temperatures Appearance 5% inner 20% upp. 10% upp. 15% upp. 30% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity suffici- suffici- suffici- easily easily ently ently ently Particle 10-15 10-15 5-10 app. 15 app. 15 size (.mu.m) Oil drops n.d n.d. n.d. n.d. n.d. (.mu.m) Speed of 46 12 2 6 2 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance no se- 20% upp. no se- no se- no se- paration cl. phase paration paration Viscosity pseudo- suffici- viscous* pseudo- pseudo- plastic ently plastic plastic Particle 10-15 10-15 5-10 app. 15 app. 15 size (.mu.m) Oil drops n.d. n.d. n.d. n.d. n.d. (.mu.m) Speed of 25 14 23 6 4 dissol. (s) *screw cap leaky, crystals from the liquid observed.

Detailed Description Paragraph Table (5):
TABLE D Experiment no. 16 17 18 19 20 Component Composition in % Deionized 40.5 40.8 40.8 40.5 40.5 water Ammonium 27.0 27.2 27.2 27.0 27.0 sulphate Glyphosate, 20.3 20.4 20.4 20.3 20.3 98% Ethoquad 10.2 C/25 (6) Arkopon T 10.2 hockonc. (17) Berol 987 10.2 (18) Surfadon LP 10.2 300 (19) Aerosil R 1.4 972 (20) Attagel (5) 2.0 1.4 2.0 2.0 Total weight 148 147 147 148 148 (g) Density 1.26 1.26 1.28 1.27 1.26 (g/ml) Glyphosate 256 257 261 258 256 (g/l) Amm. 340 343 348 343 340 sulphate (g/l) Evaluation before storage Appearance no se- no se- 10% lower no se- no se- paration paration cl. phase paration paration Viscosity slightly pseudo- pseudo- pseudo- pseudo- viscous plastic plastic plastic plastic Particle app. 10 10-15 app. 10 app. 10 app. 10 size (.mu.m) Oil drops n.d. n.d. n.d. <25 n.d. (.mu.m) Speed of 25-100 25-100 n.d. 25-100 <25 dissol. (s) Evaluation after storage at various temperatures Appearance 10% upp. 30% upp. 15% lower no se- no se- cl. phase cl. phase cl. phase paration paration Viscosity suffici- pseudo- pseudo- pseudo- pseudo- ently plastic plastic plastic plastic Particle 5-10 app. 10 app. 10 app. 10 app. 10 size (.mu.m) Oil drops n.d n.d. n.d. <25 n.d. (.mu.m) Speed of 3 3 14 2 13 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance no se- 10% upp. no se- no se- no se- paration cl. phase paration paration paration Viscosity slightly pseudo- slightly pseudo- some viscous plastic viscous plastic viscous Particle 5-10 10-15 5-10 10-15 5-10 size (.mu.m) Oil drops n.d. n.d. n.d. 25-100 n.d. (.mu.m) Speed of 5 2 19 4 20 dissol. (s)

Detailed Description Paragraph Table (6):
TABLE E Experiment no. 21 22 23 24 25 Component Composition in % Deionized 40.5 41.4 40.0 38.7 38.2 water Ammonium 27.0 27.6 26.7 25.8 25.5 sulphate Glyphosate, 20.3 20.7 20.0 19.4 19.1 98% Berol OX 10.2 10.3 13.3 16.1 15.9 45-11 (21) Attagel (5) 2.0 1.3 Total weight 148 145 150 155 157 (g) Density 1.26 1.26 1.26 1.25 1.25 (g/ml) Glyphosate 256 261 252 243 239 (g/l) Ammonium 340 348 337 323 319 sulphate (g/l) Evaluation before storage Appearance no se- 15% lower 15% lower 15% lower 10% lower paration cl. phase cl. phase cl. phase cl. phase Viscosity pseudo- easily easily easily slightly plastic viscous Particle app. 15 10-15 app. 15 10-15 app. 10 size (.mu.m) Oil drops <25 25-100 <25 25-100 25-100 (.mu.m) Evaluation after storage at various temperatures Appearance 5% upp. 35% upp. 30% inner 20% lower 5% inner cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity clearly very ea- easily suffici- pseudo- pseudo- sily ently plastic plastic Particle 10-15 10-15 10-15 10-15 app. 10 size (.mu.m) Oil drops <25 n.d. n.d. n.d. n.d. (.mu.m) Speed of 3 2 2 2 3 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance no se- 30% upp. 15% inner 15% lower 10% lower paration cl. phase cl. phase cl. phase cl. phase Viscosity clearly very ea- easily suffici- pseudo- pseudo- sily ently plastic plastic Particle 10-15 10-15 app. 15 10-15 10-15 size (.mu.m) Oil drops <25 n.d. 25-100 n.d. 25-100 (.mu.m) Speed of 10 1 1 2 3 dissol. (s)

Detailed Description Paragraph Table (7):
TABLE F Experiment no 26 27 28 29 30 Component Composition in % Deionized water 40.8 40.5 40.9 47.2 40.5 Ammonium sulphate 27.2 27.0 27.3 20.3 27.0 Glyphosate, 98% 20.4 20.3 20.5 20.3 20.3 Marlipal 1618/25 (22) 10.2 Radiasurf 7417 (23) 10.2 Berol OX 45-11 (21) 10.3 10.2 Berol 533 (24) 10.2 Aerosil R 972 (20) 1.0 Attagel (5) 1.4 2.0 2.0 2.1 Total weight (g) 147 148 146.5 148 148 Density (g/ml) 1.27 1.28 1.26 1.22

1.26 Glyphosate (g/l) 345 346 258 248 256 Ammonium sulphate 259 260 344 248 340 (g/l) Evaluation before storage Appearance no separation no separation no separation no separation no separation Viscosity slightly slightly pseudo- pseudo- pseudo- viscous viscous plastic plastic plastic Particle size (.mu.m) app. 15 app. 15 app. 10 app. 15 app. 15 Oil drops (.mu.m) n.d. 25-100 25-100 25-100 <25 Evaluation after storage at various temperatures Appearance 10% upp. 15% upp. 30% upp. 30% upp. 15% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity clearly pseudo- pseudo- pseudo- suffici- pseudo- plastic plastic plastic ently plastic Particle size (.mu.m) 10-15 app. 10 app. 10 10-15 app. 10 Oil drops (.mu.m) n.d. n.d. 25-100 n.d. n.d. n.d. Speed of dissol. (s) 2 2 2 2 3 Evaluation after storage 14 days at 55.degree. C. Appearance no separation no separation no separation 20% upp. no separation cl. phase Viscosity slightly pseudo- pseudo- easily viscous* viscous plastic plastic Particle size (.mu.m) 10-15 app. 10 app. 10 app. 15 app. 10 Oil drops (.mu.m) n.d. n.d. n.d. n.d. n.d. Speed of dissol. (s) 7 3 2 2 17 *Screw cap leaky, crystals from the liquid observed.

Detailed Description Paragraph Table (8):
TABLE G Experiment no. 31 32 33 34 35 Component Composition in % Deionized 27.4 34.0 40.5 36.9 33.1 water Ammonium 41.1 17.0 sulfamate Ammonium 17.0 24.6 22.1 sulphate Ammonium 27.0 nitrate Glyphosate, 20.5 20.4 20.3 38.5 44.8 98% Berol OX 10.3 10.2 10.2 45-11 (21) Attagel (5) 0.7 1.4 2.0 Total weight 146 147 148 130 145 (g) Density 1.35 1.29 1.25 1.33 1.38 (g/ml) Glyphosate 277 263 254 512 618 (g/l) Electrolyte 555 439 338 327 305 (g/l) Evaluation before storage Appearance 10% lower no se- no se- 20% upp. 10% upp. cl. phase paration paration cl. phase cl. phase Viscosity easily slightly easily passende slightly viscous viscous viscous Particle app. 15 10-15 10-15 20-25 app. 20 size (.mu.m) Oil drops 20-100 25-100 25-100 n.d n.d. (.mu.m) Evaluation after storage at various temperatures Appearance 25% lower 10% upp. 30% upp. 30% upp. 20% upp. cl. phase cl. phase cl. phase cl. phase cl. phase Viscosity easily pseudo- easily passende slightly plastic viscous viscous Particle app. 15 10-15 10-15 25-30 app. 20 size (.mu.m) Oil drops <25 n.d. n.d. n.d. n.d. (.mu.m) Speed of 2 3 2 32 12 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance 15% lower no se- 30% upp. 30% upp. 15% upp. cl. phase paration cl. phase cl. phase cl. phase Viscosity easily pseudo- easily easily slightly plastic viscous Particle app. 15 10-15 app. 15 app. 25 app. 20 size (.mu.m) Oil drops n.d. n.d. 25-100 n.d. n.d. (.mu.m) Speed of 3 5 2 16 6 dissol. (s)

Detailed Description Paragraph Table (9):
TABLE H Experiment no. 36 37 38 39 40 Component Composition in % Deionized 27.0 23.7 37.8 27.6 26.3 water Kalium 42.1 thiocyanate Ammonium 40.5 39.5 sulphamate Natrium 29.7 bromide Ammonium 33.8 acetate Glyphosate, 20.3 98% Glyphosate 20.3 23.0 Na-salt Glyphosate 27.6 23.0 NH.sub.4 -salt Berol OX 10.2 9.9 10.1 9.2 45-11 (21) Marlipal 9.9 1618/25 (22) NaOH, 28% 1.4 Attagel (5) 2.0 1.3 0.7 1.8 1.3 Total weight 148 152 148 163 152 (g) Density 1.33 1.24 1.39 1.35 1.35 (g/ml) Glyphosate 270 285 282 373 310 (g/l) Electrolyte 539 522 413 456 533 (g/l) Evaluation before storage Appearance 10% lower 5% lower 10% inner no se- no se- cl. phase cl. phase cl. phase paration paration Viscosity pseudo- suffici- easily pseudo- clearly plastic ently plastic psueplas. Particle app. 15 10-15 10-15 30-50 app. 15 size (.mu.m) Oil drops n.d. <25 n.d. n.d. 25-100 (.mu.m) Evaluation after storage at various temperatures Appearance 10% lower 10% lower 25% upp. no se- 10% lower cl. phase cl. phase cl. phase paration cl. phase Viscosity easily suffici- easily clearly clearly pseuplas. ently pseuplas. pseuplas. Particle 20-25 app. 15 10-15 app. 50 app. 20 size (.mu.m) Oil drops n.d n.d. n.d. n.d. n.d. (.mu.m) Speed of 3 5 3 9 2 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance 10% lower 10% lower 20% upp. no se- no se- cl. phase cl. phase cl. phase paration paration Viscosity clearly suffici- easily clearly clearly pseuplas. ently pseuplas. pseuplas. Particle 15-20 10-15 app. 15 30-50 app. 15 size (.mu.m) Oil drops n.d. n.d. n.d. <25 n.d. (.mu.m) Speed of 7 8 5 21 5 dissol. (s)

Detailed Description Paragraph Table (10):
TABLE I Experiment no. 41 42 43 44 45 Component Composition in % Deionized 38.0 38.0 13.6 38.0 22.1 water Ammonium 20.5 32.2 sulfamate Ammonium 25.3 25.3 25.3 sulphate Glyphosate, 19.0 19.0 20.6 19.0 25.0 98% Berol OX 9.5 9.5 10.3 9.5 45-11 (21) Glycerin 6.3 34.3 Propylene 20.7 glycol PEG E200 6.3 (27) Lactic acid 6.3 Attagel (5) 1.9 1.9 0.7 1.9 Total weight 158 158 146 158 140 (g) Density 1.27 1.25 1.30 1.27 1.34 (g/ml) Glyphosate 241 238 268 241 335 (g/l) Elektrolyt 321 316 267 321 431

(g/l) Evaluation before storage Appearance no se- no se- no se- no se- 20% upp. paration paration paration partaion cl. phase Viscosity pseudo- pseudo- pseudo clearly easily plastic plastic plastic pseudo- plastic Particle app. 15 app. 10 app. 15 app. 15 app. 10 size (.mu.m) Oil drops 25-100 >100 n.d. 25-100 n.d. (.mu.m) Evaluation after storage at various temperatures Appearance no se- 10% upp. 10% lower 5% upp. 35% upp. paration cl. phase cl. phase cl. phase cl. phase Viscosity pseudo- pseudo- pseudo- clearly easily plastic plastic plastic pseudo- plastic Particle 10-15 app. 10 app. 15 app. 15 app. 10 size (.mu.m) Oil drops n.d n.d. n.d. n.d. n.d. (.mu.m) Speed of 2 2 4 2 3 dissol. (s) Evaluation after storage 14 days at 55.degree. C. Appearance no se- no se- no se- no se- 25% upp. paration paration paration paration cl. phase Viscosity clearly pseudo- pseudo- clearly easily pseudo-plastic plastic pseudo- plastic plastic Particle app. 15 5-10 app. 15 app. 15 app. 10 size (.mu.m) Oil drops n.d. n.d. n.d. n.d. n.d. (.mu.m) Speed of 8 2 5 2 3 dissol. (s)

Detailed Description Paragraph Table (11):
TABLE J Experiment no. 46 47 48 49 Component Composition in % Deionized water 38.0 38.0 40.5 57.6 Ammonium sulphate 25.3 25.3 27.0 14.3 Glyphosate, 98% 19.0 19.0 30.5 25.2 Berol 02 (13) 6.3 6.3 Hydropar 19 (25) 9.5 Radia 7131 (26) 9.5 Attagel 1.9 1.9 2.0 2.9 Total weight (g) 158 158 148 139 Density (g/ml) 1.22 1.21 1.34 1.22 Glyphosate (g/l) 232 230 409 174 Ammonium sulphate 309 306 362 307 (g/l) Evaluation before storage Appearance 10% lower 15% lower no se- 10% upp. cl. phase cl. phase paration cl. phase Viscosity suffici- suffici- pseudo- easily ently ently plastic Particle size (.mu.m) app. 20 app. 15 10-15 20-25 Oil drops (.mu.m) >100 25-100 n.d. n.d. Evaluation after storage at various temperatures Appearance 30% 2 30% lower 10% upp. 10% upp. upp. cl. cl. phase cl. phase cl. phase phases Viscosity suffici- pseudo- pseudo- easily ently plastic plastic Particle size (.mu.m) app. 15 10-15 10-15 20-25 Oil drops (.mu.m) >100 >100 n.d. n.d. Speed of dissol. (s) 2 2 2 22 Evaluation after storage 14 days at 55.degree. C. Appearance 15% lower 20% lower no se- no se- cl. phase cl. phase paration paration Viscosity suffici- pseudo- pseudo- easily ently plastic plastic Particle size (.mu.m) app. 15 app. 15 10-15 20-25 Oil drops (.mu.m) >100 >100 n.d. n.d. Speed of dissol. (s) 4 5 2 4

Detailed Description Paragraph Table (12):
TABLE K Experiment no. 50 51 Component Composition in % Deionized water 42.8 41.7 Ammonium sulphate 28.6 27.8 Moussex 904 SE (28) 0.7 Ethoquad C/25 (6) 25.0 Berol OX 45-11 (21) 27.8 Attagel 40 (5) 3.6 2.0 Total weight (g) 140 144 Density (g/ml) 1.15 1.14 Glyphosate (g/l) -- -- Ammonium sulphate (g/l) 329 317 Evaluation before storage Appearance 10% lower 10% lower cl. phase cl. phase Viscosity sufficiently sufficiently Particle size (.mu.m) -- -- Oil drops (.mu.m) >100 25-100 Evaluation after storage at various temperature Appearance 30% lower 25% lower cl. phase cl. phase Viscosity sufficiently sufficiently Particle size (.mu.m) -- -- Oil drops (.mu.m) n.d. n.d. Evaluation after storage 14 days at 55.degree. C. Appearance 10% lower 5% lower cl. phase cl. phase Viscosity sufficiently sufficiently Particle size (.mu.m) -- -- Oil drops (.mu.m) n.d. n.d.

Detailed Description Paragraph Table (15):
TABLE N Experiment no. 59 60 61 62 Component Composition in g Deionized water 60.0 30.0 30.0 Ammonium sulphate 40.0 20.0 40.0 40.0 Propylene glycol 30.0 30.0 60.0 Glyphosate, 98% 30.0 30.0 30.0 30.0 Genapol OX 130 (30) 20.0 20.0 20.0 20.0 Viscosity Brook- 1800 3100 -- -- field at 20.degree. C. mPaxs mPaxs

Other Reference Publication (1):
STN International, Chemical Abstracts, vol. 119, No. 9, "Herbicidal glyphosate salt concentrate", Aug. 30, 1993.

CLAIMS:

5. A composition according to claim 1, wherein the herbicide is glyphosate, glufosinate, bilanafos and/or glyphosine.

7. A composition according to claim 1, wherein the herbicide is glyphosate, glufosinate, bilanafos and/or glyphosine in its free, non-neutralized form or completely or partly converted into its respective ammonium salt by reaction with ammonia.

21. A composition according to claim 19, wherein the non-ionic surfactant is a member selected from the group consisting of an alkylglycoside, an alkylpolyglycoside, an alkoxylated alkylglycoside, an alkoxylated alkylpolyglycoside, an alkoxylated saccharide, an alkoxylated polysaccharide, an alkoxylated acetylene diol containing a symmetrically substituted triple bond or an ethoxylated polymethylsiloxyane.

25. An activating additive (adjuvant) in concentrated form for admixture with compositions containing glyphosate- and/or glufosinate for combating weeds, said additive comprising at least one surfactant in an amount of 4-58% by weight being emulsified, suspended and/or dissolved in a liquid, aqueous phase, and at least one undissolved, fine-grained, not biologically active, viscosity regulating filler, said filler acting to prevent the separation of the surfactant and being present in an amount of at least 0.3% by weight, characterized by comprising an electrolyte, which is dissolved in the liquid, aqueous phase and, which is not a surfactant, in an amount of at least 5% by weight.